

## REMARKS

### *Generally*

#### Summary of the Prosecution

In the Office Action of 01/11/2005 (“Initial OA”), Claims 1-28 were pending in the application. Claims 5, 13, 19, 24, and 27 were objected to because of informalities. Claims 1-14 were rejected under 35 USC 101 as directed to non-statutory subject matter. The Initial OA rejected all claims under various combinations of references and Official Notice.

The undersigned’s reply of 03/03/2005 (“First Reply”) amended the claims to remove informalities; traversed the rejections under 35 USC 101; objected to each use of Official Notice as improper; and argued that the rejections under 35 USC 103 did not state a *prima facie* case of unpatentability even if each use of Official Notice was proper since some elements of some claims remained unaddressed and no teaching, motivation, or suggestion to combine multiple references (beyond a rote recitation that “it was obvious” to do so) was provided.

In the FINAL OA, Claims 1-28 remained pending in the application; objections as to informalities noted in the Initial OA were withdrawn; rejections of Claims 1-14 under 35 USC 101 were withdrawn; a new objection was asserted against Claim 14; support for each instance of Official Notice was offered; and support for unaddressed claim elements was offered.

#### Issues Remaining

Claims 1-28 remain pending in the application. Claim 14 has been amended to address the rejection raised in the FINAL OA. Official Notice asserted against Claims 11 and 25 remains improper. **The undersigned hereby renews the request that the Office either provide authority for the Official Notice asserted against Claims 11 and 25, or withdraw the rejection.**

Even assuming that Official Notice was properly taken against Claims 11 and 25, the OA fails to state a *prima facie* case of unpatentability under 35 USC §103 in several instances because not all claim limitations are addressed by the references and the noticed “facts.” Further, in each case where claims are rejected under 35 USC §103, the OAs still do not indicate teaching, suggestion, or motivation to combine those elements that it does find. **For these**

reasons, explained in further detailed below, the undersigned requests that the rejections under 35 USC 103 be withdrawn.

This Reply uses:

- underline and ~~strikeout~~ when citing corrected claim language in the body of the Reply;
- *Italics* when quoting the application;
- Courier when quoting the OA; and
- Courier underlined when quoting a reference.

***Regarding Claim Rejections under 35 USC §103***

**Regarding Claims 1, 15, and Claims Dependent Thereon, as Unpatentable Over Karro**

The OAs still fail to account for all elements of the Claims 1 and 15. The invention as claimed in Claim 1 requires a set of *ballot choices that are digitally signed using the individual's private key*. The Initial OA asserts that the set {public key *s*, ID} taught in Karro discloses this. The First Reply points out that the present application calls for the use of the **private** key for signing a set of ballot choices.<sup>1</sup>

In response the FINAL OA asserts:

Karro et al. teach a method and system for securely voting over a network(Abstract) wherein the system utilizes the well known and well established public key encryption scheme wherein voters are assigned a public/private pair key <several citations supporting this assertion> ...

Menezes et al. ... teach that the well known and established practice of cryptography is "... about the prevention and detection of cheating and other malicious activities. This book describes a number of basic cryptographic tools (primitives) used to provide information security. Examples of primitives include encryption schemes <cite>, hash functions <cite>, and digital signature schemes <cite>. Figure 1.1 provides a schematic listing of the primitives considered and how they relate. ...

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<sup>1</sup> See First Reply, page 12.

Menezes et al.- further teach that "The encryption method is said to be a public key encryption scheme if for each associated encryption/decryption pair (e;d), one key e (the public key) is made publicly available, while the other d (the private key) is kept secret" <cite>. Menezes et al. Further clarifies public key encryption "To avoid ambiguity, a common convention is to use the term private key in association with public-key cryptosystems, and secret key in association with symmetric-key cryptosystems. This may be motivated by the following line of thought: it takes two or more parties to share a secret, but a key is truly private only when one party alone knows it." <cite>.

While the assertions above appear to be correct, none of the assertions above, nor those in the Initial OA, disclose the use of an individual's **private** key to encode a filled ballot as claimed. Thus, absent references disclosing each and every element of the claims, the OAs do not establish a *prima facie* case of unpatentability. Therefore, the undersigned requests that this rejection be withdrawn.

**Regarding Claims 2, 5, 16, 19, and Claims Dependent Thereon as Unpatentable over Karro in View of Official Notice.**

**The OAs still fail to account for all elements of Claims 2, 5, 16, and 19.** The claims require:

*confirming the retention of the vote at the server by signing (1) the individual's signature of the ballot, (2) the server's signature of the ballot and (3) the vote serial number (i.e., a confirmation) and transmitting the signed confirmation to the individual who submitted the ballot. (numbers and 'i.e.' added for clarity)*

The First Reply notes that the Initial OA fails to address this limitation.<sup>2</sup>

The FINAL OA asserts:

Karro et al. teach that the method and system for securely voting over a network further comprises transmitting (sending) of a signed vote confirmation (receipt) by the system to the voter ("the tallier (i.e. system, server) signs the encrypted ballot x and returns it to the voters as a receipt... ", Page 3, Paragraph 8; Voting Phase: Step 9 voter's browser generates a receipt when the authenticator confirms receiving the ballot..", Page 5;

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<sup>2</sup> See First Reply, page 13.

Lemma 3 (sic, the cited lemma appears to be #9) “Due to the fact that voters are given a receipt, and that they are allowed to view the published lists as described in the Announcement Phase, a voter’s vote cannot be altered, duplicated, or removed without being detected.”, Page 7).

While sections referenced by the FINAL OA do appear to describe the system returning a “receipt” to the voter, the “receipt” is not the claimed “*confirmation*.” The claimed “*confirmation*” requires at least three specific items, i.e., “(1) *the individual’s signature of the ballot*, (2) *the server’s signature of the ballot* and (3) *the vote serial number*,” not disclosed as part of the “receipt.”

Thus, absent references disclosing each and every element of the claims, the OAs do not establish a *prima facie* case of unpatentability. Therefore, the undersigned requests that this rejection be withdrawn.

**Regarding Claims 3, 4, 6-10, 12, 17, 18, 20-24, 26 as unpatentable over Karro**

See the remarks directed to the rejection of the parent claims.

**Regarding Claims 11 and 25 as Unpatentable over Karro in View of Official Notice**

First, see remarks directed to the rejection of the parent claims of Claim 11 and Claim 25.

Second, **Official Notice With Regard to Claims 11 and 25 remains improper.** The Initial OA “notices” two “facts” with regard to Claims 11 and 25 and asserts that “it would have been obvious” to exploit the noticed “facts:”

representation ... of a document as an image ... is old and very well known in the art, and

corrupting an image is more difficult than corrupting plain text and therefore provides an additional level of security

The First Reply notes that “obvious” is not the appropriate criteria for taking official notice and that the noticed “facts” are not such that they were subject to instant and unquestionable demonstration at the time of the invention (i.e., the appropriate criteria for taking

Official Notice; *See* MPEP §2144.03). The First Reply insisted on a reference to support each instance of Official Notice.<sup>3</sup>

In response, the FINAL OA cites Cranor and Cytron, *Sensus: A Security-Conscious Electronic Polling System for the Internet* (hereinafter “CRANOR”) page 4, column 2, paragraphs 1-2 as follows:

The pollster acts as a voter's agent, presenting human readable ballots to a voter, ... Some pollsters may have the ability to display multimedia ballots with a graphical user interface; others will use a simple text-based interface. ...

Our pollster implementation has a simple text user interface. It has the ability to display unvoted ballots described using our ballot description language. ...

Now that World Wide Web browsers with HTML forms support have become widespread, HTML may prove to be a better ballot specification language for most purposes.

Nowhere does CRANOR disclose the claimed limitation, i.e., a bit map ballot. While bit map ballot is “human readable,” “human readable” does not disclose “bit map.” All sorts of ballots, including paper ballots, are human-readable. Neither do the terms “multimedia ballots with a graphical user interface,” “simple text-based,” and “HMTL” disclose a bit map ballot.

Third, **if the Official Notice was proper, the OAs still fail to establish a prima facie case of unpatentability under 35 USC §103.** The combination of Karro and the two officially noticed facts does not account for each element of the rejected claims, nor does it account for the teaching, motivation, or suggestion to combine (which teaching, motivation, or suggestion to combine is not susceptible to official notice) the elements from the references. The noticed “facts” do not relate to *ballots* as claimed. The only material of record that relates the facts to ballots, and recognizes the utility thereof, is the application itself. Therefore, neither Official Notice, nor CRANOR provide for the limitation of Claims 11 and 25.

For these reasons, and the reasons cited in remarks directed to the parent claims, the rejection of Claims 11 and 25 should be withdrawn.

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<sup>3</sup> See First Reply, page 17.

**Regarding Claims 13 and 27 as Unpatentable over Karro**

See remarks directed to the rejection of Claims 1, 2, and 5.

**Regarding Claims 14 and 28 as Unpatentable over Karro**

See remarks directed to the rejection of Claims 1, 3, and 4.

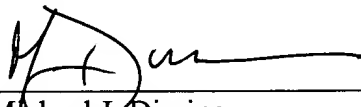
**CONCLUSION**

The foregoing is submitted as a full and complete response to the Final Office Action mailed 06/27/2005. With consideration of the above remarks, the undersigned submits that this application is in condition for allowance, and such disposition is earnestly solicited. If the Examiner believes that the prosecution might be advanced by discussing the application with the undersigned, in person or over the telephone, we would welcome the opportunity to do so.

Respectfully submitted,

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